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THESIS

**PAST PERFORMANCE IN SUPPLIER
CERTIFICATION PROGRAMS:
A STUDY OF CURRENT CERTIFICATION AND
INCENTIVE PRACTICES IN CERTIFIED
SUPPLIER PROGRAMS**

by

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June 1997

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CERTIFIED SUPPLIER PROGRAMS**

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Submitted in partial fulfillment
of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 1997

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Since the mid 1980s both Government and private sector buying organizations have used certified supplier programs to improve the quality of their supplier base. Certified supplier programs improve a company's suppliers by requiring and recognizing excellent quality practices and by eliminating poor quality suppliers. This study examines current commercial and Government certified supplier programs, including the Army Contractor Performance Certification Program CP(2), in order to find successful certification techniques and recommend improvements to CP(2). Some of the better practices currently in use are: requiring a high level of past quality performance for certification, giving certified contractors more future business as an incentive for participation, and using ISO 9001 as the common standard for quality management processes. By adopting these techniques, the Army can improve CP(2) and make it an even more valuable program.

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I. INTRODUCTION

A. PURPOSE

The purpose of this thesis is to evaluate the feasibility of using past performance information to certify U.S. Army contractors through the Army's Contractor Performance Certification Program [CP(2)] and to make recommendations for improvements to the program.

B. BACKGROUND

Expanding the use of performance information to increase efficiency in acquisition is one of the current thrusts of acquisition reform. A proven way to use performance information to the buyer's benefit is to establish a supplier certification program. Commercial companies realize significant benefits from supplier certification or preferred supplier programs. The Army currently has the CP(2) program in place. Some of the benefits of these programs are: increased quality of incoming materiel and supplies, reduced oversight of contractors, reduced or eliminated inspection requirements, and good contractor-Government relations. Therefore, the Army can benefit from a good program to certify contractors.

There are, however, significant barriers to CP(2)'s success, such as CICA limitations, current Federal acquisition policies and practices, and the cost of collecting and evaluating the

performance information. No new policy can be implemented unless there is a reasonable expectation that its benefits will outweigh its costs. This thesis will analyze successful programs and the pertinent barriers to determine recommendations for a more successful Army program.

C. RESEARCH QUESTIONS

1. Primary Research Question

What are the significant problems associated with the Army's Contractor Performance Certification Program, and what actions can be taken to overcome these problems and improve the supplier certification program for the U.S. Army?

2. Subsidiary Research Questions

a. What limitations does CICA place on certification of contractors and what can be done to overcome these limitations?

b. What limitations do current Army policies and culture place on certification of contractors and how can they be overcome?

c. What lessons can be learned from supplier certification programs in other Government organizations and how can they be implemented in the Army?

d. What are the key elements of successful supplier certification programs in commercial companies and how can they be implemented in the Army?

e. What are the metrics that can be used to measure the costs and benefits of a supplier certification program in the Army in order to determine the cost effectiveness of the program?

D. SCOPE

This research addresses supplier certification as it pertains to the Army. It includes a literature review of major issues that affect implementation of a supplier certification program in the Army. In addition, it examines several current successful commercial and Government programs concentrating on lessons learned and possible recommendations for the Army.

E. METHODOLOGY

This study used literature research and interviews with Army procurement officials to determine what barriers to the CP(2) program exist in the Army and Federal procurement systems. It uses interviews with managers of Government and commercial supplier certification programs and program documentation to determine key elements of successful programs. From this data possible solutions for the Army were identified and evaluated. Finally, the best solutions were chosen and recommendations synthesized for implementing a more successful contractor certification program in the Army.

F. ORGANIZATION

Chapter I (Introduction) is an introduction including a brief purpose, background, scope and methodology.

Chapter II (Literature Review) provides an overview of supplier certification programs and the history of their use in both the Government and commercial sectors. It includes a detailed examination of the significant barriers and limitations to certification programs in the Army.

Chapter III (Presentation of Data) is a presentation of the data gathered from numerous interviews with procurement officials both in the Government and industry. It provides insights and lessons learned from both sides of the issue as well as an overview of current practices and methods used in commercial and Government programs. It also includes examination of the metrics used to measure the costs and benefits of certification programs.

Chapter IV (Analysis) is an analysis of the data from chapters II and III to determine which methods and practices, if any, should be used to improve the Army's CP(2) program.

Chapter V (Conclusions and Recommendations) presents the findings of the study and provides recommendations for implementation of specific practices for a supplier certification program. In addition, it provides answers to the research questions as well as recommendations for further study.

G. BENEFITS OF STUDY

The main benefits of this study are the recommendations to the U.S. Army Materiel Command (AMC) for regarding improvements to the current CP(2) program. Army contracting personnel who

implement the program will benefit from the lessons learned in other programs and the proposals for surmounting institutional and regulatory barriers. The Army will benefit from improvements to the program through a more efficient procurement process that saves time and money and obtains high quality products.

Additionally, future students may benefit from recommendations for further study which could lead to more complete study of supplier certification programs and more recommendations for improvement.

II. LITERATURE REVIEW

A. INTRODUCTION

The literature pertinent to Government supplier certification or pre-qualification programs is divided into three general categories: articles on commercial applications, Government laws and regulations, and Government studies. These three general categories provide the necessary background information for this study. Articles in the commercial field describe historical development, evaluation methods, and current trends in supplier certification programs. The Government studies detail early attempts to certify Government suppliers and some of the problems encountered. Government laws and acquisition regulations set the limits within which procurement officials must work when implementing a supplier certification program.

The current trend toward the use of more efficient commercial practices in Government procurement includes the concept of "Best Value" source selection decisions. A key element of best value is considering a supplier's past performance as part of the source selection criteria. Most commercial companies take this a step further by certifying their top quality suppliers based on quality performance and doing most of their business with those suppliers. The commercial

literature section explains why these supplier certification programs are considered essential to success in many companies. The Government cannot implement identical programs for various reasons outlined in the two sections on Government literature below.

B. COMMERCIAL LITERATURE

Commercial literature on supplier certification programs shows that most large companies have such programs, and that they consider the benefits well worth the costs. Additionally, current commercial articles point out some of the methods used by companies with successful programs.

1. The Current Trends

Beginning with the Total Quality Management movement of the mid 1980s, companies in the United States began forming closer relationships with their suppliers and reducing their supplier bases to a few high quality suppliers through preferred supplier programs.

Quality improvement has been on the corporate radar screen for more than a decade now. For purchasing that's meant hours of training in total quality management techniques, building better relations with a slimmed down supplier base, and measuring your quality improvements (and setbacks) using tools like statistical process control.[Ref. 1:p. 1]

Presently, most companies have some kind of supplier quality program working. In fact, 77% of the 503 buying professionals surveyed by PURCHASING for the November 21, 1996 issue indicated

that they have good supplier involvement programs in place[Ref. 2:p. 1]. Some companies' programs have drastically reduced the number of suppliers that they deal with. For example, Motorola's Land Mobile Business cut its supply base from 4,200 suppliers to 250 preferred suppliers[Ref. 3:p. 4].

Another current trend is involving suppliers early in the product design process in order to reap the benefits of their specific commodity expertise. As one company surveyed by Purchasing magazine stated, "We let our suppliers know from the onset of any relationship that we don't just look for metal to come through the door, but always are looking for potential cost reductions and alternative materials"[Ref. 2:p. 9]. Clearly, buyers are working more closely than ever with suppliers to their mutual benefit.

2. Benefits of Supplier Certification Programs

With the increasing popularity of supplier certification programs, the appropriate question is, what benefits do the companies and/or their suppliers reap when participating in them? The benefits for buyers include improved quality, lower purchasing costs, and improved relationships with suppliers. The main benefit for suppliers is an increased share of the buying company's business along with a longer term commitment from the buying company.

a. Buyer Benefits

Companies with robust preferred supplier programs believe that they have significantly improved the quality of incoming goods. "From the customer's standpoint, the advantage of a preferred supplier program is plain better quality," says Robert Hall, professor of operations management at Indiana University-Purdue University in Indianapolis. "If I no longer need to worry about having defective items show up from a supplier, that shows up in better quality going out to my customer." [Ref. 4:p. 24] Improved quality goes a long way toward cost savings as well as end product improvement.

Nearly every company with a certified supplier program claims to have significant cost savings from reduced quality inspections, production interruptions, and streamlined source selection. Slaninka explains "Suppliers who achieve excellent product quality also do a better job of managing inventories and on-time delivery support, they achieve ongoing cost reductions by improving yields and eliminating inspections." [Ref. 5:p. 4] With a supplier base reduced to only high quality suppliers, purchasing managers can spend less time and effort deciding which vendor to choose for a particular item. These factors can add up to significant cost savings for a corporation.

The team concept, together with stringent supplier performance metrics, has helped Allied Signal get a handle on quality. Since it began using commodity

teams in 1992, Allied Signal has reduced the number of defective goods received from suppliers from 40,000 parts per million (ppm) to 1,902 ppm in early 1996. Half of the company's 3,000 suppliers already ship defect-free. And Fred McClintock, corporate vice president of materials management at Allied Signal, estimates that these efforts will save his company \$1.2 billion over the next three years.[Ref. 1:p. 4]

This is the kind of result that has many companies jumping on the certified supplier bandwagon.

By reducing its supplier base a company will have more time to work closely with individual suppliers and form better relationships. Also, by giving particular vendors more business and a long term commitment, the buyer will make up a larger portion of that supplier's business which will make them more responsive to the buyer's needs. One materials purchasing manager explained it this way:

We have about 350 Developing local suppliers now. Five years ago, we had two and a half, three times as many. Now our top 75 suppliers account for 90% of our purchasing dollars. The top 40 account for two thirds of our dollars. Before, when we had all those suppliers we really didn't have the time to work with them. We were busy processing orders, chasing down shortages, talking to sales people, and dealing with re-work problems...[O]ur business was spread so thin over so many suppliers (in the past) it wasn't worth that much to any of them.[Ref. 2:p. 3]

Again, companies will only have the ability to work closely with suppliers if they have a relatively small number to work with. A preferred supplier program is a good way to identify the high quality suppliers that deserve the majority of the business.

b. *Supplier Benefits*

Certified suppliers mainly benefit from increased business from the certifying company and a long term commitment for orders from the buyer. In theory, certified suppliers have a big advantage over other companies when competing for contracts. However, when a supplier is just one of several who are certified for a particular commodity, the advantage is less obvious. Some suppliers are less enamored of these programs than the buying companies. Reaction from equipment vendors is often strongly negative. "We've been an approved supplier to Du Pont for three years," comments a marketer with one major pump manufacturer, who requests anonymity, "and it hasn't done a damned thing for us." Is there an advantage to being one of several preferred competitors for an order? "The others will be the guys you've got to beat anyway," says one disenchanted supplier." [Ref. 6: p. 40] Whether suppliers like them or not, these programs are gaining in popularity and they will probably have to learn to live with them.

Another benefit enjoyed by suppliers who enter into a close relationship with a buyer is training in the latest quality methods, such as statistical process control. From Small Business Reports:

Big companies also share their operating expertise with preferred suppliers, and small companies can profit handsomely from that exchange. Many large companies,

for example, have invested heavily in developing training capabilities in various quality-management tools. Gaining access to those resources may be worth even more than the promise of increased sales.[Ref. 4: p. 25]

The benefits available to a supplier depend on the quality of the relationship fostered by the program.

3. Commercial Supplier Certification Methods

All supplier certification programs include vendor rating systems using various measures of performance. Some programs also include monitoring of suppliers' quality control systems and/or quality control training for supplier personnel as mentioned above.

Vendor rating systems usually include but are not limited to an evaluation of quality for materials/parts provided and timeliness of deliveries. Rockwell was one of the first corporations to develop a systematic approach to vendor ratings.

This program was one of the first in the aerospace industry to successfully include supplier quality and schedule performance in a single rating, dollarized to reflect the cost of poor quality. Jointly administered by Quality Assurance and the Material Department, the program is applicable to commercial and military contractors.[Ref. 7:p. 3]

The means used to monitor supplier performance are usually part of a company's purchasing system, with automated tracking of rejections, reworks and deliveries. The purpose of any of these systems is to identify high quality vendors through their actual performance record.

In addition to evaluating actual performance, most supplier certification programs also require an evaluation of the supplier's quality control programs and quality improvement efforts. A strategic sourcing manager for Motorola says, "We score suppliers on approach to quality, deployment of quality improvement initiatives, and results." [Ref. 1:p. 3] The buying companies want to make sure that their preferred suppliers are committed to continuous quality improvement and cost reduction so that they can maintain their competitive edge.

Preferred supplier programs are tailored to the type of commodity being purchased. They seem to work best when applied to products with simple open specifications. "Preferred supplier programs succeed when they are limited to procuring commonplace items with generic specifications." [Ref. 6:p. 40] This makes sense because it is impossible to pre-qualify a supplier for a complex item that has never been produced before.

In summary, companies with supplier certification programs evaluate a supplier's actual performance and quality processes to determine their eligibility for preferred supplier status. They require from a supplier a commitment to continuous improvement as well as demonstrated high quality performance and on time delivery. To a certain extent they will work with promising suppliers to bring them up to acceptable levels for

certification. In return, they expect a commitment by the supplier to maintain high quality and lower costs.

C. GOVERNMENT LAWS AND REGULATIONS

Federal laws and acquisition regulations provide guidance for and limitations imposed on all federal procurement actions. Title 10 U.S. Code contains the laws which apply to Department of Defense (DoD) procurement. The Federal Acquisition Regulation (FAR) spells out the acquisition specific regulatory guidance for all federal agencies. The Defense Federal Acquisition Regulation Supplement and agency specific documents provide more specific guidance. Until recently, both the law and regulation required procurements to be based on full and open competition with a few narrowly defined exceptions. Any effort to create a Government supplier certification program which excludes all other than certified suppliers from the source selection process would fly in the face full and open competition requirements contained in the Competition in Contracting Act of 1984 (CICA). However, recent acquisition reform legislation has increased contracting officers' discretion in competitive range determination and softened the requirement for full and open competition. Also, the FAR now allows for multiyear contracts which gives contracting officers the ability to make long term commitments to certified suppliers.

1. The Requirement For Full and Open Competition

CICA and the FAR set forth very specific guidelines for full and open competition. Title 10 U.S. Code states:

[T]he head of the agency in conducting a procurement for property or services-

- (A) shall obtain full and open competition through the use of competitive procedures in accordance with the requirements of this chapter and the modifications to regulations pursuant to section 2752 of the Competition in Contracting Act of 1984 (41 U.S.C. 403 note): and
- (B) shall use the competitive procedure or combination of competitive procedures that is best suited under the circumstances of the procurement.[Ref. 8:Sect. 2304]

The FAR part 6.101 states, "(a) 10 U.S.C. 2304 and 41 U.S.C. 253 require, with certain limited exceptions (see Subparts 6.2 and 6.3), that contracting officers shall promote and provide for full and open competition in soliciting offers and awarding Government contracts." [Ref. 9:prt. 6.101] A preferred supplier program which excludes non participants from bidding for Government contracts clearly violates the intent of these laws and regulations. The law does allow certain exceptions. These exceptions, however, are very narrow and do not apply to supplier certification programs except for, possibly, the exception for public interest.

(2) Full and open competition need not be provided for when the agency head determines that it is not in the public interest in the particular acquisition concerned.

(c) Limitations.

(1) A written determination to use this authority shall be made in accordance with Subpart 1.7, by (i) the Secretary of Defense, the Secretary of the Army... or

(ii) the head of any other executive agency. This authority may not be delegated.

(2) The Congress shall be notified in writing of such determination not less than 30 days before award of the contract.

(3) If required by the head of the agency, the contracting officer shall prepare a justification to support the determination under paragraph (c)(1) above.

(4) This Determination and Finding (D&F) shall not be made on a class basis.[Ref. 9:prt. 6.3]

Clearly, this exception is too cumbersome to use regularly because of the lengthy justification process that must happen on each contract attempted.

The FAR states that source selection procedures are designed to:

(a) Maximize competition; (b) Minimize the complexity of the solicitation, evaluation, and the selection decision; (c) Ensure impartial and comprehensive evaluation of offerors' proposals; and (d) Ensure selection of the source whose proposal has the highest degree of realism and whose performance is expected to best meet stated Government requirements[Ref. 9:prt. 15.603].

Requirements (a) and (b) are in direct conflict. Maximizing competition also makes it more difficult to meet requirement (d). The more proposals that a contracting officer has to evaluate, the more complex and difficult the source selection process will be. Commercial companies use supplier certification programs to simplify this process by limiting competition to a few high quality suppliers. They retain the element of competition without making it "Full and Open".

Congress recognized the need to tailor procurement processes according to the needs of each program and modified the requirement for full and open competition in the Federal Acquisition Reform Act (FARA) of 1995. Full and open competition is still required but must be implemented in a way that makes business sense. According to Lynn Bateman of Government Contract Advisor (GCA) Executive Reports, "The Federal Acquisition Regulation (FAR) will be amended to insure that the full and open competition requirement 'is implemented in a manner that is consistent with the need to efficiently fulfill the Government's requirements' (emphasis added). The term 'efficiently fulfill' is not defined in the act." [Ref. 10:p. 1]. This change opens the door for practices like preferred supplier programs which increase the efficiency of the procurement process. FARA also expands the discretion of the contracting officer in making the competitive range determination which is discussed in the next section.

2. Competitive Range Determination

One way that competition may be legally limited is through competitive range determination. In competitive negotiation the FAR allows for a competitive range determination by the contracting officer to eliminate proposals which do not have a reasonable chance of winning the bid:

15.609 Competitive range. (a) The contracting officer shall determine which proposals are in the competitive range for the purpose of conducting written or oral discussion (see 15.610(b)). The competitive range shall be determined on the basis of cost or price and other factors that were stated in the solicitation and shall include all proposals that have a reasonable chance of being selected for award. When there is doubt as to whether a proposal is in the competitive range, the proposal should be included.[Ref. 9:p. 15.609]

The competitive range determination could allow a contracting officer to narrow the field to only those contractors who are certified. However, since the competitive range is supposed to include any offeror who has a reasonable chance of winning, narrowing the field that drastically would not be within the spirit of the regulation.

The language in FARA allows contracting officers to make a competitive range determination to improve the efficiency of the source selection process:

Under FAR 15.609 all proposals which have a reasonable chance of being selected for award are included in the competitive range. FARA will now permit the contracting officer to limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the offerors rated most highly. This limitation, however, is to be implemented in accordance with criteria specified in the solicitation.[Ref. 11:p. 1]

Contracting officers may be able to use this new flexibility to include only preferred suppliers in the competitive range. Certification, however, would have to be identified as a significant source selection criteria in the solicitation.

3. Multiyear Contracts

In the past federal regulations discouraged multiyear contracts. Now, however, acquisition reforms encourage contracting officers to do what makes the most sense and gets the best value for the Government. The FAR allows multiyear contracts provided that they make business sense:

(b) For DoD, NASA, and the Coast Guard, the head of the agency may enter into a multiyear contract for supplies if--

(1) The use of such a contract will result in substantial savings of the total estimated costs of carrying out the program through annual contracts;

(2) The minimum need to be purchased is expected to remain substantially unchanged during the contemplated contract period in terms of production rate, procurement rate, and total quantities;

(3) There is a stable design for the supplies to be acquired, and the technical risks associated with such supplies are not excessive;

(4) There is a reasonable expectation that, throughout the contemplated contract period, the head of the agency will request funding for the contract at a level to avoid contract cancellation; and

(5) The estimates of both the cost of the contract and the cost avoidance through the use of a multiyear contract are realistic.

(c) The multiyear contracting method may be used for the acquisition of supplies or services.

(d) If funds are not appropriated to support the succeeding years' requirements, the agency must cancel the contract.[Ref. 9:prt 17.105-1]

Multiyear contracts could allow the kind of long term commitment to a certified supplier that is the hallmark of current commercial purchasing systems. However, even with a multiyear contract, the commitment is uncertain due to the federal budget process in which Congress authorizes and appropriates funds on an

annual basis. Still, contractors find multiyear contracts more attractive than year-to-year contracts because of the stability they provide. In a Government certified supplier program, contracting officers could use multiyear contracts as an effective incentive for contractor participation.

D. GOVERNMENT STUDIES

DoD instituted several programs in the mid 1980s and early 1990s to begin using commercial practices, including awarding contracts on the basis of factors other than price. In order to take contractor performance into account for award decisions, the Defense Logistics Agency (DLA) and two commands within the Army Materiel Command (AMC) all developed vendor rating systems or contractor performance certification programs.

In an effort to move towards the buying practices of private industry, Total Quality Management initiatives in the late 1980s led to increased efforts to consider other factors in award decisions...As a result, the DLA vendor rating system (DVRS) has been developed...[Ref. 12:p. ix]

The DVRS focused mainly on automating the collection of performance data and contractor ratings. The Army Materiel Command's Contractor Performance Certification Program CP(2) focused on contractors' quality processes and controls as well as performance.

The focus of supplier evaluations was very similar to what is found in commercial certified supplier systems. The rating

systems generally tracked two performance areas, timeliness of deliveries, and quality of products. "[T]wo high level factors other than price are measured. Delivery performance, a measure of the contractor's ability to deliver contract lines on time...Quality performance, measuring historical nonconformance rates of a contractor"[Ref. 12:p. ix]. These are exactly the same as the main criteria used in commercial programs. Two of the programs also considered the level of expertise and documented processes in quality control before certifying a contractor:

Factors evaluated include:...

- Quality system in full compliance with Military Qualification Standard 9858A.
- Evidence of an effective statistical process control system for both procured and manufactured materiel.
- An aggressive and continuous effort to improve quality and productivity.[Ref. 13:p. 8]

All of the programs had a good system for evaluating contractor performance. The problems for the programs were mainly caused by the restrictions placed on them by acquisition regulations requiring open competition and discouraging multiyear commitments.

In audits of two of these systems, the U.S. Army Audit Agency found two major areas that needed improvement. Those areas are incentives for contractors to become certified, and continued monitoring of contractors who are already certified. The agency found that, "Command had not adequately developed the

incentives for participating in the Program. ...Also, procedures were not established to effectively monitor contractors' performance after certification." [Ref. 14:p. i] The only incentive for contractors to participate in these programs was an advantage on future source selections. None of the programs spelled out exactly what that advantage meant:

Materiel Command had not finalized the procedure for granting advantages to program contractors during the source selection processes...the advantages of participation in the Program could not be easily quantified and compared by contractors with the costs of meeting program prerequisites. [Ref. 14:p. 2]

At that time, contracting officers could not limit competition or easily grant multiyear contracts. Because of the lack of incentives, some high quality contractors did not seek certification. "Because identified Program incentives were lacking, inadequate, or not sufficiently defined, one of Tank-Automotive Command's most eligible contractors declined to participate in the program." [Ref. 14:p. 9] Clearly, the lack of incentives was a major stumbling block for these programs.

E. SUMMARY

The available literature shows that most large commercial companies have supplier certification programs and that they are convinced that these programs save money. Typical commercial and Government programs evaluate performance in terms of timeliness and quality. A supplier's internal quality programs and

processes are also evaluated. Laws and regulations regarding Government procurement prevent contracting officers from giving the kinds of advantages to certified suppliers that commercial companies usually do. However, recent acquisition reform legislation, including FARA, may make it easier to give certified suppliers a longer term commitment and concrete advantages in the source selection process.

III. PRESENTATION OF DATA

A. INTRODUCTION

Government and civilian acquisition professionals shed much light on current efforts to implement certified supplier programs in both federal procurement and commercial purchasing activities. They make many germane points about cost, benefits, incentives, certification criteria, and significant problems with supplier certification programs in the federal procurement environment. For this research, data was collected from procurement professionals involved with several Government and commercial preferred supplier programs including: the Air Force Blue Ribbon Contractor Program, the Navy Blue Star Program, the Army CP(2) Program, and defense contractors' supplier certification programs. Most of the comments confirmed the conclusions reached in the preceding literature review, but there were also several interesting points made concerning the relative worth of Government programs.

B. OTHER SERVICE PROGRAMS

Until recently, both the Air Force and Navy ran programs which had features similar to commercial preferred supplier programs. The Air Force used the Blue Ribbon Contractor Program and the Navy had the Blue Star Program. For separate reasons, neither program is currently in use.

1. The Air Force Blue Ribbon Contractor Program

The Air Force Blue Ribbon Contractor program allowed contracting officers to make awards for certain contracts to a contractor other than the low bidder provided the contractor selected was a blue ribbon contractor and the low bidder was not. The pertinent Air Force Manual outlines the program this way:

5315.60590 The AFMC Blue Ribbon Program.

(a) General:

(1) The Blue Ribbon Program (BRP) is a best value contracting technique that provides a framework for Air Logistics Center (ALC) contracting officers to exercise business judgment in awarding contracts for Federal Supply Class (FSC) items that are normally awarded on the basis of price alone. It recognizes that among responsible offerors, varying degrees of quality and delivery performance exist and that award to the lowest evaluated price offeror is not always in the best interest of the Government. Upon application and approval, those contractors meeting the BRP criteria will be designated as Blue Ribbon Contractors (BRCs) and their designation will be considered in contract award decisions.[Ref. 15:p. 27]

The Blue Ribbon Contractor Program based certification on performance in two areas, quality and timely delivery. It did not assess a contractor's quality management programs or processes. Contracting officers could award contracts to Blue Ribbon Contractors at a price up to 20% higher than a non-Blue Ribbon Contractor. In order to do this, however, contracting officers had to write a justification of their decision to award the contract based on best value rather than lowest price. The excessive requirement for documentation of decisions as well as

the administrative burden of tracking blue ribbon suppliers and applicants caused the demise of the program.

The Air Force recently canceled the program because it simply was not used enough to justify the expense of maintaining the records. Roger Hanson, who wrote the white paper recommending termination of the program, felt that the program was too bureaucratic. It placed too much administrative burden on the contracting officers and, thus, was not supported as well as it might have been.[Ref. 16] The Air Force made only a small fraction of eligible contract awards based on best value during the program. Hanson's white paper put it this way:

Last year approximately 4,600 competitive, negotiated awards were made for replenishment spares at the five ALCs; however, the total Blue Ribbon awards were still a small percentage (6.4 percent) of the total ALC pool and true "best value" awards (awards with a price differential) represent only a tiny percentage of potential Blue Ribbon awards.[Ref. 17:p. 2]

Because very few contractors received a source selection advantage from the program, the only real incentive for participation was the positive public exposure and recognition gained through the award[Ref. 16]. Hanson also felt that the program worked best in commands where the process was streamlined to make administration less burdensome and one person was put in charge of, and thus made an advocate for, the program[Ref. 16].

2. The Navy Blue Star Program

The Navy Blue Star Program was a recognition program for contractors who demonstrated outstanding performance. Like the Air Force Blue Ribbon Contractor Program, the Blue Star award was based on product quality and timely delivery. The programs differed, however, in that the Navy did not attempt to give Blue Star contractors any advantage in the source selection process. It was simply a "bragging rights" award to publicly recognize contractors with superior performance. As Bob Zoglio, an engineer with product quality directorate at the Navy Inventory Control Point Philadelphia put it, "The fact is that contractors loved bragging rights, and, if they get our award, they put it in their hallway where all their subcontractors can see it...they liked it a lot." [Ref. 18] Like the Air Force program, the Blue Star Program did not evaluate a contractor's programs and processes but concentrated strictly on performance.

The Blue Star Program is currently on hold because the Navy is implementing a new system for rating contractors, called a Contractor Report Card, in order to comply with the new requirement for evaluation of past performance in the source selection process. This report card includes ratings on production lead time and innovative contracting as well as the quality and timeliness included in the old program. [Ref. 18] The Navy felt it was best to put the program on hold until enough

evaluations are done with the Contractor Report Card to distinguish between contractors under the new criteria. It is possible that some source selection advantage may accrue to awardees under the new system. In any case, awardees should have superior ratings for past performance.

C. THE ARMY CONTRACTOR PERFORMANCE CERTIFICATION PROGRAM

[CP(2)]

Army Materiel Command's (CP)2 program seeks to improve AMC's supplier base through a joint Government/contractor effort:

The (CP)2 was initially established in 1985 and was standardized across AMC with the publication of AMC Pamphlet (AMC-PAM) 715-16 in January 1995.

1. The purpose of (CP)2 is to improve supplier quality and promote continuous quality improvement of AMC contractors and facilities through cooperative effort between AMC, Defense Contract Management Command (DCMC) and contractors. Through (CP)2, AMC reviews a contractor's quality, production/manufacturing, management, and, where appropriate, design/development processes at a specified facility under the criteria established in AMC-PAM 715-16. Those facilities meeting or exceeding the specified requirements gain certification.[Ref. 19:p. 1]

(CP)2 is a recognition program like the Air Force and Navy programs, but it emphasizes programs and processes used to manage quality more than actual performance. Army acquisition professionals at various commands within AMC gave their opinions on the effectiveness of the program and the significant problems associated with it. Quality managers with AMC suppliers also gave their perspectives on the program. The main areas of

concern were: benefits to the Army versus costs, incentives for contractor participation, and certification criteria. Many of the people interviewed had suggestions for improvement in these areas.

1. Benefits To The Army

The Army feels that the CP(2) program provides higher quality products, better relationships with and quicker response from contractors, and lower oversight and inspection costs. Measuring these benefits in relationship to the program costs is difficult because many of the benefits are hard to quantify.

Higher quality products are the most obvious benefit of (CP)2. Celia Hadden of AMC's Industrial Operations Command (IOC), an advocate of the program, put it this way:

I think that obviously with the contractors that we've got in the program, by going through the process and then continuing with their continuous improvement program, we improve the quality of the products that they are delivering to us. We have an improved partnering relationship with that contractor. What we've seen also is that because, at least in our segment of the industry, the program is so well known that we really feel that it raises the benchmark for the entire industry, even the non-participants.[Ref. 20]

Most of the professionals interviewed agreed that higher quality products are a definite benefit of the program. The positive impact of the higher quality products delivered is, however, difficult to quantify.

Another benefit of the (CP)2 program mentioned by Celia Hadden is closer partnerships with contractors. This parallels the longer term commitment and close relationships found in commercial certified supplier programs. This in turn allows the Army to reduce oversight and quality assurance costs. The AMC (CP)2 pamphlet describes the benefit this way:

The program will allow the Government to reduce oversight over certified facilities, thereby greatly reducing attendant administrative costs. Limited Government resources can be redirected toward contractors in greater need of assistance. As (CP)2 expands into other functional areas, further reductions in oversight of certified contractors will be achieved.
[Ref. 21]

Mike Ryskamp of the Army's Communications and Electronics Command (CECOM) felt that this was one quantifiable benefit of (CP)2 to the Army. On the other hand, he also pointed out that the general trend in federal procurement is toward less oversight anyway. Even if (CP)2 or other programs make less oversight necessary, oversight will decrease because of constrained resources and acquisition reform. Therefore, the actual benefit may be negligible.[Ref. 22] There was general agreement among the Army procurement professionals involved with (CP)2 that reduced oversight and reduced inspection costs are a positive result from the program.

In summary, none of the people contacted dispute the benefits of (CP)2 for the Government. What is lacking is a way

to quantify these benefits and compare them to the costs of administering (CP)2.

2. Incentives And Benefits In (CP)2 For Contractors

The benefits for contractors in (CP)2 are outlined in the AMC (CP)2 pamphlet:

Perhaps the greatest benefit to a contractor from the (CP)2 process is the improvement that occurs in his processes and procedures. The (CP)2 process drives contractors to improve their processes, and then to continue improving these after certification. The result of improved processes is seen in the metrics used as an overall improvement of the contractor's efficiency. Savings are seen in reduced scrap, rework, cycle times, elimination of non-value-added efforts, and overall increase in yields and the quality of end items.... The contractor gains the ability to have the Government participate on a noncontractual basis and team with them to provide a customer viewpoint of where they can improve their process.... This leads to better systems and a more satisfied customer.... There are several areas of potential recognition for a certified contractor.... The contractor has the right to advertise his certification. As part of the certification, the contractor is awarded a plaque and flag that signifies that the Army has recognized him as an excellent contractor. This recognition may be used by potential customers when deciding whether to place orders with the company.... The certification process and award have been shown to be a morale builder for the contractor's employees.... ISO 9000 standards are the foundation of the (CP)2 process.... Certification under (CP)2 is a recognition by the Army that the contractor meets all the criteria of the appropriate ISO standard.[Ref. 21]

AMC feels that the number one benefit to the contractor from (CP)2 is improved internal processes which make the company more competitive. The pamphlet also includes a section on program incentives:

Incentives for Contractor Performance Certification

- 1) - First Article Test Waiver/Reduction
- 2) - Waiving Government Review of Acceptance Inspection Equipment (AIE) Design by the Government
- 3) - Contractor Use of Statistical Process Control Without Prior Government Approval
- 4) - Reduction of Deliverable Data Approval Criteria Contract Data Requirements List (CDRL) Documents
- 5) - Flow Down of Incentives to (CP)2 Certified Subcontractors[Ref. 21]

Most of these incentives reduce administrative costs of the certified contractor. The question is, are these benefits and incentives sufficient to encourage participation by most contractors? Procurement officials in both Government and private industry had a wide variety of answers to that question.

The general consensus on both sides of the street is that the current incentives are inadequate. This is a long standing problem in Government certified supplier programs as was pointed out in the literature review. In contrast, some (CP)2 participants felt that the improvement in their internal processes was a great benefit to their companies. Jeff Elliot, Quality Manager for Nuclear Metals, said that (CP)2 provides his company with a good framework for running process control, product quality management, continuous process improvement, and ultimately improving customer satisfaction[Ref. 23]. Parvez Siddiqi, Director of Product Assurance at Pentastar Electronics, saw improvements in his company's processes which lead to improved quality and on time delivery as a result of (CP)2

[Ref. 24]. Steve Torma of Primex Corporation also felt that his company's main benefit from (CP)2 was improved internal processes which made them a lower cost, more competitive contractor[Ref. 25]. All three of these gentlemen also agreed that a concrete advantage in the source selection process would be an even greater incentive for participation.

This was a consistent theme with nearly everyone interviewed. Both Government and civilian procurement professionals agreed that if contractors gained a competitive advantage by being (CP)2 certified, they would be much more likely to put forth the effort necessary to join the program. Both Celia Hadden of IOC and Mike Ryskamp of CECOM said that contractors would be "knocking our door down" to get into the program if they could gain an advantage in source selection[Refs 20,22]. Bulova is a former (CP)2 certified company which dropped the program. Bill Mohler, Director of Quality Assurance at Bulova, said that Bulova did not renew its commitment to (CP)2 because they had hoped for an advantage in bid and proposal activities for best value procurements which never materialized, "We weren't reaping any benefits so, in all honesty, we decided to drop it." [Ref. 26] He later said that Bulova would be very interested in rejoining the program if it would give them a concrete advantage in source selection. The quality manager at Radford Army Ammunition Plant, a Government owned contractor

operated facility which is in the process of becoming (CP)2 certified, also agreed that any competitive advantage would be a significant incentive to participate in the program[Ref. 27].

IOC has already initiated a plan to grant an advantage in the source selection process to (CP)2 certified contractors.

Their memorandum requesting a GAO advisory opinion states,

Because (CP)2 certified contractors have demonstrated that they are quality producers, we would now like to expand the program to provide benefits to (CP)2 certified contractors in the source selection process. A description of the (CP)2 program, including our proposed source selection incentives, are provided at enclosure 2. Because these source selection incentives represent a change in the way we solicit and evaluate competitive procurements, we want to ensure that GAO will not view the incentives as improperly restricting competition. Therefore, we request your support in seeking an advisory opinion from GAO in order to confirm the propriety of implementing the incentives as proposed. A draft memorandum forwarding this request to GAO is provided at enclosure 3.[Ref. 28]

This will be a great help to the program if AMC can avoid the appearance of restricting competition.

The other incentive that most of the people interviewed agreed would be attractive to contractors is eligibility for longer term contracts. Longer term contracts allow companies to better plan ahead and further increase their efficiency.

Primex's quality manager indicated that his company considered long term contracts extremely desirable because of the stability they provide[Ref. 25]. This incentive is only partially applicable to Government procurement because long term contracts

are only applicable where there is a bona fide long term requirement for the item.

In summary, the benefits and incentives for contractors participating in the (CP)2 program are sufficient for some contractors, especially those who stand to benefit from improvements in their internal processes. Contractors who already have good quality and continuous improvement processes in place, however, do not have much incentive for joining the program or continuing in it once certified. Further incentives, such as a concrete advantage in competitive source selection and longer term commitments to certified contractors, would make the program much more attractive to all Government contractors.

3. Certification Criteria

The certification criteria for (CP)2 are based on ISO 9001 standards with additional requirements. The AMC (CP)2 pamphlet lays out the general requirements:

This chapter is patterned after the criteria of ISO 9001, Quality Systems - Model For Quality Assurance in Design/Development, Production, Installation and Services (Second edition 1994). In addition to the criteria of ISO 9001, this chapter includes criteria for customer satisfaction, quality costs, warranty, ethics, business planning, environmental, safety and a plan for continuous improvement.[Ref. 21]

These requirements are mostly process oriented. They ensure that the contractor has the systems and processes in place to constantly monitor and improve quality. Some of the procurement

professionals interviewed agreed that the emphasis of the (CP)2 evaluation should be on processes. Others thought that the criteria should also include evaluation of a contractor's actual performance in terms of quality and timely delivery.

Celia Hadden of IOC indicated that (CP)2 is focused on processes but also requires contractors to track their performance through their own system of metrics. She felt that a ridged point system of rating contractors for quality performance based on Government metrics is no longer appropriate given recent guidance on past performance.[Ref. 29] This may come from the desire to impose fewer requirements on contractors as a part of acquisition reform. Companies involved in the (CP)2 program agree that it is mainly process oriented.

Other people feel that there should be a better balance between performance and process assessment for certification. This would more closely mirror commercial programs which place a heavier emphasis on performance while helping their preferred suppliers improve processes. George Hanna, an analyst for the Army Material Systems Analysis Activity (AMSAA) who is developing the business case for (CP)2, agreed that it should look more closely at actual performance parameters[Ref. 29].

D. COMMERCIAL CERTIFIED SUPPLIER PROGRAMS

Several of the commercial companies contacted had certified or preferred supplier programs. These programs were very similar

to the types found in the current literature. The quality managers interviewed gave good descriptions of the benefits their companies realized from the programs as well as the incentives to suppliers and the assessment criteria used in their programs. There are several lessons from their observations which may be applicable to Government certified supplier programs.

1. Benefits To Purchasers

One of the major benefits that the companies contacted get from their certified supplier programs is cost avoidance. One Director of Quality Assurance commented that it is difficult to capture the real cost of a bad supplier[Ref. 26]. One area of cost avoidance is the cost of inspecting incoming products. Talley Defense has a system called the Partner's in Excellence Program in which the preferred suppliers ship directly to stock with little or no inspection. Larry Watt, Talley's Director of Quality, says, "The most expensive time to find out whether a part is good or bad is when it is taken off a truck by our receiver." [Ref. 30] In the same vein Parvez Siddiqi, Quality Manager for Pentastar, said that the cost of dealing with their certified suppliers was very low while the cost of dealing with their lower quality suppliers was very high[Ref. 24]. This was not the only benefit cited, but it was the one mentioned most often. Other benefits include a dedicated, committed supplier base that will give priority to the company's work.

2. Supplier Incentives And Benefits

The main supplier benefit offered by commercial companies is increased business. Talley Defense gives its partners in excellence extra points on competitive bids and intends to offer them preference on long term contracts[Ref. 30]. Pentastar also gives their certified suppliers preference on contracts. They will often reduce the number of suppliers for a given commodity from several to two or three certified suppliers.[Ref. 24] Talley Defense also assists its partners in excellence by working with them to improve their pre-shipment quality[Ref. 30]. These benefits and incentives have worked well for the companies involved. Again, the most powerful incentive for the suppliers is additional business.

3. Certification Process And Criteria

The preferred supplier systems mentioned in this study generally included evaluations of both processes and performance. Larry Watt, Director of Quality Assurance for Talley Defense, describes their system this way:

It's a blend of both [process and performance]. It requires him [the supplier] to get a purchase order, complete the purchase order, and to send us the hardware with zero defects and all of the proper certifications. He has to do that over a period of time and send us in at least three shipments with zero defects. Also, I have two people,...both of whom are solid quality people. Both of them can go out and work with a vendor, and help him set up his program.... With the idea being, assist the vendor to make good parts

rather than send them into us and we'll inspect them and find they're bad.[Ref. 30]

Pentastar certified suppliers must pass through several levels of evaluation. They are initially screened to see if they have suitable quality systems in place and financial stability. If they pass the initial screening, they are issued an order for a small lot and Pentastar does first article testing and close scrutiny of this lot. If the first lot is good, the supplier may receive further orders which are monitored as well. If they demonstrate sufficient performance over time, they become certified suppliers.[Ref. 24] Bulova also has a preferred supplier program. Interestingly, they see the requirements placed on them as a defense contractor in the form of small business set asides and required competition on subcontracts as a hindrance to applying best value to their purchases.[Ref. 26]

E. SUGGESTIONS FOR IMPROVEMENT

The final question asked in each interview was whether the person had any suggestions for improvement, mainly for (CP)2 but also for certified supplier programs in general. The respondents came up with some interesting common themes. Government officials generally felt that the program would be greatly improved by including a source selection advantage for certified suppliers. Contractors agreed. A contractor who was going through the process of certification and one who had just

finished both felt that it took too long. Contractors and the Government would benefit more by getting contractors on the road to high quality and continuous process improvement sooner. Part of the problem was resource constraints within IOC.[Refs. 23,27] Two of the companies also felt that the (CP)2 criteria should be scrapped in favor of ISO 9001 standards so that contractors would not be held to multiple standards[Refs. 26,30].

F. SUMMARY

The table below summarizes, in general terms, the data gathered for this study through interviews with procurement professionals.

DATA SUMMARY TABLE FOR INTERVIEWS

DATA SOURCE	PERSPECTIVE	GENERAL INSIGHTS
Navy ICP, AFMC	Other service supplier certification programs	- Certification Criteria - Metrics/use rate
AMC,MICOM, TACOM, CECOM,IOC	Army CP(2) administering and advocating officials	- CP(2) strengths - CP(2) weaknesses - Army Procurement Culture
AMSAA	Business case analysis of CP(2)	- Cost/Benefit of CP(2) - Performance evaluation
Nuclear Metals, Pentastar, Primex	CP(2) Certified Contractors	- CP(2) Contractor benefits - Further incentives
Talley Defense, Radford AAP	In process for CP(2) Certification	- SPI and ISO 9001 - Slow certification process
Bulova	Non CP(2) certified contractor	- Lack of CP(2) incentives - CP(2) costs to contractors
Talley Defense, Pentastar, Bulova	Commercial Supplier Quality Program Managers	- Commercial incentives - Performance evaluation

Government and commercial procurement professionals provided valuable insights into the current state of certified supplier programs in the Government and industry. Their views help to gain a more complete picture of the practices and techniques, both successful and unsuccessful, which are currently in use. In the following chapter these observations are analyzed to determine the answers to the research questions and provide conclusions and recommendations.

IV. ANALYSIS

This chapter provides analysis of the data gathered for chapters two and three. The previous chapters identified some of the problems with the current certified supplier system in the Army. These chapters also identified some possible solutions to the problems and improvements that could be made to the program by examining similar Government and commercial programs. The purpose of this chapter is to analyze these alternatives and determine which are the best and most applicable to the Army's procurement system.

The problems with the Army's CP(2) program fall into four main categories: Lack of strong incentives for contractors to participate in the program, lack of objective performance requirements for certification, burdensome additional requirements placed on contractors, and lack of measurable benefits and costs from which the program can be justified. Examination of other DoD programs and commercial programs provided some possible solutions for all of these problems except measuring costs and benefits.

The barriers to the program's success are mainly regulatory rather than cultural. Even those procurement officials who do not think the program is worthwhile believe that it can work if the incentive problem can be overcome. No one interviewed felt

that cultural resistance within the Army was a problem for the program. Most of those interviewed feel that the requirements for competition imposed by CICA are a substantial barrier to the program.

A. CONTRACTOR INCENTIVES

1. The Problem

Lack of contractor incentives is the most important problem with the current CP(2) program. Certified suppliers in commercial programs generally enjoy a substantial advantage in obtaining new business and long term contracts. The CP(2) program does not currently provide certified suppliers with any advantage in the source selection process or attempt to reward the supplier with long term contracts. CP(2) does help contractors improve their internal quality processes and provides public recognition for certified contractors. It also relieves certified contractors of some administrative burdens. These minor incentives are enough for some companies, especially those who do not have mature quality assurance processes in place and who need assistance in setting up a good quality program. There is no real incentive, however, for contractors who already have mature quality assurance and continuous improvement programs in place. For these companies CP(2) is simply an additional burden and not worth the cost of participation. Arguably, these

companies are the ones the Army would most like to have as certified suppliers.

2. Solutions

As previously noted, the IOC is already attempting to give certified contractors an advantage during source selection[Ref. 19]. This is the best incentive to bring contractors into the program. If they know that their chance of winning future contracts is significantly increased through certification, they will be much more interested in joining the program. The problem with giving certified contractors a competitive edge in source selection is that contracting officers must still comply with requirements for full and open competition. Non-certified contractors must be given the same opportunities to compete for and win contracts as certified contractors. In order to make certification an advantage in source selection, the certification requirements must be included in some form in the solicitation as either a requirement or a significant evaluation factor. If it is a significant evaluation factor, certified suppliers can automatically be given maximum points for that evaluation factor. Non-certified suppliers can be evaluated and given a score based on the degree of their compliance with certification requirements. This method should avoid the possibility of protests since all offerors will be evaluated on the same criteria and competition will not be automatically restricted.

Making certification a requirement on a solicitation is probably not possible under current law. To avoid restricting competition the contracting officer would have to make the equivalent of certification as well as certification a requirement. This should be possible on contracts that have high quality and/or on-time delivery requirements. In this case, the risk to the Government is such that the contracting officer can justify requiring contractors to have mature quality control systems in place. Also, contracting officers can use the competitive range determination to narrow the field in these cases to contractors who are certified or have equivalent systems in place. By narrowing the field they reduce the effort necessary in the source selection and reap one of the potential benefits of the program. These methods are only practical in cases where quality is important enough to the success of the procurement that certification or its equivalent can be one of the major evaluation factors for source selection.

Commercial preferred supplier systems use long term commitments to certified suppliers as another incentive to give certified suppliers more business[Refs. 24,26,30]. The Army can only do long term contracts when there is a bona fide long term requirement for the item being purchased. On buys where the Army can make a long term commitment, it makes sense to award the contract to a contractor with a proven quality record, a world

class quality assurance program and a commitment to continuous improvement. Contracting officers can easily justify requiring certification or its equivalent on solicitations for long term contracts.

The CP(2) program does not currently require a demonstrated level of past performance quality[Ref. 21]. If it were included, a performance requirement could help to justify using participation in the program as an evaluation factor in solicitations. This is because past performance is now a major part of most source selection decisions. The lack of performance criteria in CP(2) is discussed in the next section.

In summary, the current acquisition reform environment should allow the Army to provide better incentives for participation in the CP(2) program. Specifically, the Army can give certified suppliers a concrete advantage during source selection for contracts on which quality and on-time delivery are essential. These include long term contracts which are very attractive to contractors. The incentives already in place are not adequate for contractors that already have excellent quality systems in place. The better incentives should bring them on board. For contractors who need help with their quality systems, the assistance that the program supplies is still a good incentive. By helping these contractors to improve their quality

the Army improves the quality of the supplier base and increases the number of high quality suppliers.

B. LACK OF PERFORMANCE CRITERIA FOR CERTIFICATION

1. The Problem

CP(2) requires certified contractors to continuously track their quality internally through their own quality metrics. The larger focus of the program is on the contractor's processes and programs. There is no requirement for the contractor to demonstrate consistent high quality performance or on-time delivery.[Ref. 21] Most commercial programs require both a defined quality management program and demonstrated performance to obtain the highest level of certification [Refs. 24,26,30]. Processes and programs help a company to achieve high quality output, but the only real proof that a contractor can deliver high quality products in a timely manner is their actual performance. CP(2) does not include any external measurement of a contractors' performance on deliveries to the Government.

2. Solutions

In order to make sure that the Government will get the benefit of high quality supplier performance from this program, CP(2) should include some objective measures of performance as criteria for certification. The two areas of performance most commonly evaluated in both Government and commercial certified supplier programs are quality level and timeliness of deliveries

[Refs 12,13,24,26, etc.]. Both of these factors are as important to the Army as they are to commercial companies. Low quality means that soldiers in the field are getting equipment that is not as good as it should be and/or the Army quality assurance inspectors are spending a lot of time and money inspecting quality in and rejecting lots that require rework. A contractor who does not deliver on time causes delays in fielding and a myriad of other problems that occur when schedules are pushed back because needed materiel has not been delivered.

Minimum standards for quality and timeliness in particular business areas are easy to develop. The problem is the expense involved with monitoring performance. In today's environment of shrinking budgets and reduced oversight, a solution that requires more inspectors and bureaucracy is dead on arrival. Fortunately, the Army and other Government agencies already track quality and delivery performance through contract administration activities conducted by DCMC. CP(2) should be able to tap into this information without significant further investment. By using metrics already in place, the Army can also avoid burdening the contractors with further requirements. Contractors should prove their ability to meet high performance standards before being fully certified.

The CP(2) evaluation of processes and programs is also valid and value added. Performance, however, is important enough that

it should also be evaluated. In order to facilitate this, both evaluations should be required to obtain full certification. The commercial systems evaluated were often two tiered. Suppliers gained an initial certification based on a buyer evaluation of their quality programs. They only obtained full certified status after a significant period of demonstrated high performance.

[Refs. 24-26,30] This is a good model and an appropriate approach for the Army system as well.

In summary, CP(2) can be improved by requiring evaluation of past performance in terms of quality and timely delivery for full certification. The Army can benefit more from a system in which contractors can get certified on both the processes and performance. This would make it easier to provide a source selection advantage for fully certified suppliers because of the past performance evaluation. More importantly, it will provide a better assurance of high quality performance from certified suppliers than the heavily process oriented program currently in place. Process certification modeled on ISO 9001 standards is still important and provides the benefits of process improvement to suppliers without mature quality programs. Also, the performance evaluation will work best if it is done using currently available performance metrics that do not place an additional burden on either the Government or contractors.

C. BURDENSOME REQUIREMENTS PLACED ON CONTRACTORS

1. The Problem

Contractors who already have fully developed quality management systems in place see CP(2) requirements as an additional, unnecessary drain on their resources. If they are already ISO 9001 certified and have a proven track record of performance what value does CP(2) certification add to their company?[Refs. 25,30] CP(2) is based on ISO 9001 requirements but adds several unique requirements as well[Ref. 21]. At the same time, acquisition reform encourages less oversight and fewer unique requirements. It stands to reason that contractors who do business with customers other than the Army have no desire to participate in a program that includes service unique requirements.

Also, some of the companies who were certified or were going through certification felt that the process took too long because of constrained resources at AMC. Inspection teams had a full schedule and return inspections to review problem areas took a long time to schedule.[Refs. 23,27] The resource problem will only get worse if the program becomes more popular and more companies try to become certified.

2. Solutions

Contractor's objections to the unique requirements of CP(2) can easily be overcome by removing the requirements above ISO

9001 standards. This would also help to ease the strain on certification teams because AMC personnel can work in conjunction with DCMC personnel who can also certify compliance with ISO 9001 standards. The CP(2) requirements above and beyond ISO 9001 are in the program for good reasons. Their value, however, may not exceed the additional cost in compliance for the contractors and monitoring for the Army. Eliminating service unique requirements is one of the main goals of the Single Process Initiative (SPI), one of the latest acquisition reform initiatives.[Ref. 31] The basic idea behind SPI is that defense contractors are able to operate much more efficiently in a particular facility if all of the agency or service specific requirements are done away with in favor of one common requirement or specification. They do not have to completely retool for different products or run separate production lines for each customer. Thus, costs are lowered and everyone saves money. The same concept can be applied to the CP(2) program and other Government supplier certification programs. By adopting ISO 9001 certification as the standard for all Government programs, the Army and other services and agencies can save a lot of redundant effort. Contractors would have one standard to meet which is recognized in the commercial world as well as in Government procurement.

Using ISO 9001 without additional requirements for process and program certification would also help with certification team

resources which would speed up the certification process. Besides DCMC teams, many commercial ISO 9001 teams are available to certify contractors who are in a hurry to obtain certification if they are willing to pay the price. Contractors would have much less trouble becoming certified for CP(2) if the unique requirements were taken out of the program. Even so, holding them to the ISO 9001 standard should ensure that they have a stringent quality management system in place. What the CP(2) program would lose is the value of including those requirements above and beyond ISO 9001.

The ISO 9001 certification, like CP(2), focuses on processes rather than performance. Therefore, CP(2) could not rely on ISO 9001 to evaluate actual performance. Performance evaluation would be done through the existing Government metrics mentioned in the previous section.

In summary, the Army could save a lot of time and effort for both contractors and the Government by eliminating process and program requirements not included in the ISO 9001 standard from the CP(2) program. The additional requirements do add value to the program, but probably not enough to justify the costs of evaluating and complying with them. High quality contractors who are already ISO 9001 certified would be more likely to join the program. Also, the Army would gain certification assistance from

other agencies and commercial enterprises which will make the process faster.

D. MEASURABLE COSTS AND BENEFITS

1. The Problem

Like all Government programs CP(2) must be scrutinized to see if the benefits outweigh the costs. The cost to the Army of running the program would be relatively easy to capture. The costs includes personnel for administration of the programming, training, travel, etc. The benefits, however, are harder to quantify. Reduced oversight costs can be measured, but the Army is reducing oversight anyway in response to funding cuts. Much of the worth in a certified supplier program lies in avoiding the cost of doing business with bad suppliers and avoided cost is always hard to measure.

A bad supplier is costly in many ways: delayed deliveries, disrupted schedules, increased inspection costs, cost of rejected lots, etc. These costs cannot be easily quantified. Remember, though, that the companies who have certified or preferred supplier programs use them to reduce their supplier base so that they do not have to do business with bad suppliers.[Ref. 25]

Another benefit of supplier certification programs, especially ones like CP(2) that include continuous improvement for suppliers, is the overall higher quality that the buyer will see in the products they purchase. For the Army that translates

to better and more reliable weapons systems, trucks, tents, and everything else that is necessary to fight and win this nation's wars. The difference in value between a good quality boot and one of poor quality is obvious to light infantrymen, but they probably could not give you a dollar figure.

2. Solutions

Although it may be hard to quantify the benefits of a supplier certification program, the benefits are, nonetheless, real and substantial. There are some ways to measure the effectiveness of a supplier certification program in terms of its use relative to the total supplier base.

Some of the metrics that may be useful in determining the effectiveness of the CP(2) program are found in the Air Force Blue Ribbon Program. That program was canceled because it was not used enough to justify the cost. They measured the percentage of contracts given to Blue Ribbon Contractors and they measured the percentage of contract awards that were made to Blue Ribbon Contractors on a best value decision.[Ref. 17] For CP(2) the percentage of all AMC contractors participating in the program is one measure that can easily be tracked. As the program matures the percentage of AMC suppliers participating should rise. More importantly, if certified suppliers are given an advantage in source selection, the percentage of contracts awarded to certified suppliers should also rise. If either of

these percentages is insignificant or decreases over time, the program is probably not having much positive effect on the quality of the AMC supplier base or the quality of incoming materiel. Also, as the certified suppliers gain an advantage in the source selection process, the percentage of contracts that are awarded to certified suppliers with a price differential will indicate whether the program is being used to make best value decisions. Also, the same metrics used to determine whether or not a contractor meets the high performance standards required for certification can be used to compare the performance of certified suppliers to non-certified suppliers. None of these measures, however, will capture the actual costs and benefits of the program.

In summary, the dollar costs and benefits of a certified supplier program are extremely difficult to measure and compare. Measurements of the program's use and comparison of contractors in and out of the program, though, are useful in determining if it is having a significant positive effect on the organization's buying activities.

E. SUMMARY

Analysis of the data gathered for this study shows that many of the problems associated with running a certified supplier program in the Army procurement system spring from regulatory

restrictions requiring full and open competition. Recent acquisition reforms may allow the Army CP(2) program to use more commercial practices that could strengthen the program and provide more benefits for the Government and contractors. Better incentives for participation, most notably a source selection advantage, should attract more and better suppliers to the program. Other improvements could increase the efficiency of the program through cooperation with other Government agencies. CP(2) could also be made more attractive for contractors by eliminating some of its unique requirements. It is difficult to reduce the benefits of the program down to a dollar figure, but there are several benefits which are probably more than worth the cost of running the program. Specific recommendations for changes and improvements to CP(2) are addressed in the next chapter.

V. CONCLUSIONS AND RECOMMENDATIONS

Analysis of the data gathered and the current literature reviewed for this study did not reveal any particularly startling conclusions. Nevertheless, the analysis does point out some areas of the Army's CP(2) program that can be improved through specific action. This chapter sets forth the major conclusions of the study as well as specific recommendations for consideration by AMC. Additionally, it addresses each of the research questions and provides summarized answers.

A. CONCLUSIONS

The conclusions reached in this research are: (1) the current incentives for participation in the Army's CP(2) program are inadequate, (2) the main barriers to providing adequate incentives are the competition requirements imposed by CICA, (3) evaluation of contractor performance is an essential part of successful supplier certification programs, (4) quantitative evaluation of the actual dollar costs and benefits of supplier certification programs is extremely difficult, and (5) the CP(2) unique requirements beyond ISO 9001 are onerous to contractors and not worth the additional effort required on both sides.

1. Inadequate Incentives

Interviews with non-certified contractors clearly showed that many contractors do not feel that CP(2) is a good deal for

them. The cost of becoming certified is not justified by the gains currently realized by certified contractors. Commercial certified suppliers generally get more business and longer term orders from their buyers. All of the contractors and Government officials interviewed felt that, if CP(2) offered an advantage to certified contractors in winning more contracts in the future, this would be a much greater incentive for participation than the current CP(2) incentives.

2. Barriers

The main barrier to making CP(2) more attractive to contractors by giving them a source selection advantage is CICA. The requirement for full and open competition makes it difficult to give any contractor a concrete advantage based solely on their certified status. Recent relaxation of the strict full and open competition requirement, however, may allow contracting officers enough flexibility to give certified suppliers some advantages. There are no discernible cultural barriers within the Army procurement community to giving certified suppliers more contracts. Most of the officials interviewed think it is a good idea that makes good business sense.

3. Performance Assessment

In all of the commercial certified supplier systems examined, certified suppliers are required to prove their ability to perform to stringent quality and on time delivery standards.

CP(2) does not require an external evaluation of contractors' performance, rather, it focuses on quality programs and processes. Good quality management processes are valuable, but they do not necessarily guarantee excellent performance. Assessment of actual performance is a must in order to have confidence in certified suppliers.

4. Cost And Benefit

The benefits of CP(2) or any certified supplier program are substantial, but hard to directly quantify. The money the Government saves in reduced oversight can be measured, but cost avoidance from eliminating low quality suppliers and the value of higher quality products to the soldier in the field are more difficult to quantify. Nonetheless, the Army can use measurements of program participation and comparison of the certified and non-certified suppliers to determine if the program is having any discernible positive effect on the supplier base and the quality of incoming goods.

5. CP(2) Unique Requirements

The Army's requirements for CP(2) certification are based on ISO 9001, but go beyond what is required for that standard. Contractors who are already ISO 9001 certified see little value in the additional requirements. The cost of complying with these additional requirements and evaluating them is probably not worth the benefit gained by leaving them in the program. Contractors

will be more willing to participate in CP(2) and other certification programs if they adopt one standard for certification of quality management programs and processes. ISO 9001 is the current recognized commercial standard.

B. RECOMMENDATIONS

The conclusions of this study lead to several recommendations for action to improve the Army's CP(2) program: (1) continue to pursue and expand on source selection advantages for certified contractors, (2) make performance to stringent quality and on time delivery standards a requirement for full certification, (3) track program participation and performance of contractors inside and outside of the program to determine if the program is having any positive effect, and (4) consider eliminating all process and program assessment requirements that are not part of ISO 9001.

1. Source Selection Advantage

AMC should continue to pursue current efforts to give certified contractors an advantage in the bid and proposal process and expand on them where possible. Specifically, they should include certification or its equivalent in the solicitation as a significant evaluation factor for source selection. If possible, they should make CP(2) certification or its equivalent a requirement on long term contracts and other contracts on which there is a significant risk to the Government

associated with poor quality or late delivery. Also, they should encourage contracting officers to limit the competitive range in these source selections to certified offerors or those who can provide documentation of similar programs and performance. Taken together, these actions should help AMC to incentivize contractors to improve their performance and participation in CP(2). This, in turn, should improve the quality of AMC's supplier base as well as the quality of incoming materiel.

2. Performance Standards

AMC should consider requiring contractors to meet strict standards of past performance on quality rate and on time delivery in order to be fully certified. They should consult with contractors in each industry area to determine appropriate standards. As much as possible, AMC should use performance metrics already in use by DCMC in order to avoid creating an additional administrative burden. By requiring a high level of past performance, AMC can further ensure that certified suppliers will deliver high quality goods in a timely manner. Also, the past performance standard will strengthen the effect of certification in source selection, thereby making the argument stronger for giving certified contractors an advantage. Contractors without a record of past performance can still gain the advantages of quality program and process certification.

3. Track Participation And Compare Performance

AMC should consider tracking the percentage of contractors involved in CP(2) and the percentage of contracts in terms of dollar value given to certified contractors. This will provide a measure of potential affect of the program across AMC. They should also compare the performance of certified and non-certified contractors within the same industries to make sure that the program is having a positive effect on the supplier base. Based on these parameters AMC should be able to determine if CP(2) is working as intended and whether they should make changes or cancel the program.

4. Remove Unique Requirements

AMC should consider removing the quality management requirements above and beyond ISO 9001 from the program. This would make CP(2) less costly to administer and make it more attractive to contractors who already have mature quality programs in place. Current acquisition reform programs, such as the Single Process Initiative, encourage fewer military unique requirements. AMC should seriously consider whether or not the unique requirements of CP(2) provide a benefit that outweighs the cost of evaluating these requirements and the advantage that AMC would gain by going to a more universally accepted standard.

C. ANSWERS TO RESEARCH QUESTIONS

1. What are the significant problems associated with the Army's Contractor Performance Certification Program [CP(2)], and what actions can be taken to overcome these problems and improve the supplier certification program for the U.S. Army?

The significant problems in CP(2) were discussed in detail in the Chapter IV. In brief, they are: lack of strong incentives for contractors to participate in the program, lack of objective performance requirements for certification, burdensome additional requirements placed on contractors, and lack of measurable benefits and costs from which the program can be justified.

The actions that should be taken to overcome these problems are found in the recommendations section.

2. What limitations does CICA place on certification of contractors and what can be done to overcome these limitations?

In the past, CICA requirements for full and open competition have kept the Army from giving certified contractors the kind of advantages in obtaining future contracts that commercial businesses give their certified suppliers. Recently, acquisition reform legislation, including FASA, relaxed some of these requirements. The Army may now be able to use certification as a requirement or as a significant source selection criteria in

solicitations. This would overcome the limitations imposed by CICA and possibly attract more contractors to CP(2).

3. What limitations do current Army policies and culture place on certification of contractors and how can they be overcome?

The only limitations in Army policies are those that implement CICA. These can be overcome as stated in the answer to question 2 above. As discussed earlier, there does not seem to be any significant cultural opposition in the Army procurement community to contractor certification programs.

4. What lessons can be learned from supplier certification programs in other Government organizations and how can they be implemented in the Army?

The Air Force and Navy systems both emphasized evaluation of performance. This can be implemented by including evaluation of past performance in the CP(2) program.

The Air Force canceled their Blue Ribbon Program because it was not used enough to justify the cost. The Army can avoid this by tracking the use of CP(2) and by making the evaluation system as easy as possible for contracting officers to work with so that they will not look at it as an added burden.

5. What are the key elements of successful supplier certification programs in commercial companies and how can they be implemented in the Army?

The key elements of commercial certified supplier programs are the definite business advantages given to their certified suppliers and the balance between process and performance evaluations required for certification. The Army can give certified suppliers an advantage and require performance evaluations as discussed in recommendations.

6. What are the metrics that can be used to measure the costs and benefits of a supplier certification program in the Army in order to determine the cost effectiveness of the program?

Costs and benefits are hard to quantify but program participation can be measured. See Recommendations, part 3.

D. RECOMMENDATIONS FOR FURTHER STUDY

1. Contractor Incentives

More study should be given to how contractors can be given incentives to perform well. Incentives can be offered, not only through programs such as CP(2), but also through innovative contracting ideas such as fixed price award fee contracts and incentive clauses.

2. Certification Program Metrics

A deeper study of cost and benefit metrics would be useful to determine the real worth of supplier certification programs. Commercial programs would be a good place to start since they are typically more focused on the bottom line than Government agencies. They may have more objective, quantifiable data.

3. Applicability Of Supplier Certification Across Industries

Knowledge of the relative level of use of supplier certification programs in various industries would help the Army and other Government agencies determine where supplier certification is most applicable. Again, industry sources could provide good information for a complete study.

LIST OF REFERENCES

1. Minahan, T., "Purchasing Rebuilds to Battle Poor Quality," Purchasing, January 16, 1997.
2. Morgan, J., "12 Areas Where Suppliers Can Help Improve Competitiveness," Purchasing, November 21, 1996.
3. Minahan, T., "Attack Cost at its Roots," Purchasing, March 6, 1997.
4. Hendricks, M., "Preferential Treatment," Small Business Reports, November, 1994.
5. Millen, A., "In Some Companies Quality Culture is Tangible," Purchasing, January 16, 1997.
6. Wilde, P. , "Preferred Vendor Lists," Chemical Engineering, February, 1992.
7. Rockwell Autonetics Electronics Systems - Anaheim, CA: Best Practices, April 1, 1996,
http://www.bmpcoe.org/surveys/RAESY_C/RAESY_C_bp.html
8. U.S. Code, Title 10, subtitle A, Part IV, Chapter 137, section 2304.
9. Federal Acquisition Regulation.
10. Bateman, L., GCA EXECUTIVE REPORT, January, 1996,
<http://cfr.counterpoint.com/grams/exreps/out823907705.html>
11. Webber, R., "1996 Defense Authorization Act Contains Major Procurement Law Changes", ARENT FOX ALERT,
<http://www.arentfox.com/alerts/1996daa.html>
12. Defense Logistics Agency, "Defense Logistics Agency Vendor Rating System," September, 1992.
13. U.S. Army Audit Agency, "Report of Audit, Contractor Certification Program, U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois", 20 November, 1990.
14. U.S. Army Audit Agency, "Report of Audit, Contractor Certification Program U.S. Army Tank-Automotive Command Warren, Michigan", June 8, 1990.

15. DEPARTMENT OF THE AIR FORCE, Headquarters AFMC, AFMC ACQUISITION CIRCULAR 96-1, October 31, 1995.
16. Hanson, Roger, Director of the U.S. Air Force Blue Ribbon Contractor Program, Interview, April 21, 1997.
17. Hanson, Roger, Air Force White Paper, ON BLUE RIBBON PROGRAM, 18 February, 1997.
18. Zoglio, Bob, Engineer, U.S. Navy Inventory Control Point, Philadelphia, Interview, May 2, 1997.
19. Hadden, Celia, Information Paper, Subject: Army Materiel Command (AMC) Contractor Performance Certification Program [(CP)2].
20. Hadden, Celia, Industrial Operations Command AMC, Interview, April 16, 1997.
21. AMC (CP)2 Pamphlet.
22. Ryskamp, Mike, CECOM, Interview, April 18, 1997.
23. Elliot, Jeff, Quality Manager, Nuclear Metals, Interview, May 2, 1997.
24. Siddiqi, Parvez, Director of Quality, Pentastar Electronics Incorporated, Interview, May 2, 1997.
25. Torma, Steve, Quality Manager, Primex, Interview May 1, 1997.
26. Mohler, Bill, Director of Quality Assurance, Bulova, Interview, May 2, 1997.
27. Woldkin, Vern, Quality Manager, Radford Army Ammunition Plant, Interview, May 2, 1997.
28. AMC Memorandum, SUBJECT: Request for GAO Advisory Opinion.
29. Hanna, George, AMSAA analyst, Interview, April 18, 1997.
30. Watt, Larry, Director of Quality Assurance, Talley Defense, Interview May 2, 1997.
31. Kaminski, Paul G., "Single Process Initiative--Progress and Prospects", Remarks of The Under Secretary of Defense for

Acquisition and Technology at Aerospace Industries Association
Board of Governors Meeting, Williamsburg, VA, May 23, 1996.

32. Spitzbarth, Bob, TACOM, Interview, April 16, 1997.

33. Davis, Gary, MICOM, Interview, April 16, 1997.

34. Kirschner, Bob, CECOM, Interview, April 23, 1997.

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